ADVANCED OFFICE AUTOMATION

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THE MARKET FOR SPECIFIC DEVICE/SERVICE CONFIGURATIONS AMONG PC USERS & MIS MANAGERS

PREPARED ESPECIALLY FOR
GTE DATA SERVICES

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INTRODUCTION

- STUDY WAS DEVELOPED IN CONJUNCTION WITH GTEDS PERSONNEL WITH THREE PRIME OBJECTIVES:
  1. PROVIDE CONFIRMATION/DISCONFIRMATION OF THE NEED FOR A JOINT RELATIONSHIP TO ADDRESS THE MARKET.
  2. CALIBRATE THE MARKET NEEDS FOR SPECIFIC PRODUCTS AND SERVICES WHICH GTEDS MIGHT OFFER INDIVIDUALLY AND JOINTLY.
  3. ESTABLISH A BASELINE MARKET ASSESSMENT WHICH CAN BE EXPANDED, SEGMENTED AND REFINED IF NEEDED, I.E., IF BASELINE ASSESSMENT SHOWS SUFFICIENT FUNDAMENTAL DEMAND.

- AS INITIALLY FORMULATED, TWO KEY GROUPS WERE TO BE ASSESSED:
  1. USERS OF PERSONAL COMPUTERS IN LARGE CORPORATIONS.
  2. MIS MANAGEMENT IN LARGE CORPORATIONS.

- AS INITIALLY DESIGNED, THE STUDY WAS FRAMED TO INCLUDE:
  1. 80 INTERVIEWS WITH USERS, RANDOMLY SELECTED FROM DEPARTMENTS IN MANUFACTURING, INSURANCE, BANKING.
  2. 40 INTERVIEWS WITH MIS MANAGEMENT IN LIKE COMPANIES.

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- o THE STUDY WAS SUBSEQUENTLY EXPANDED TO INCLUDE ADDITIONAL INTERVIEWS WITH:

  1. 20 GTE TELCO PC USERS SELECTED BY GTEDS ON A DEPARTMENTAL "LIKELIHOOD" CRITERION.
  2. 20 TEXAS INSTRUMENTS (T.I.) PC USERS AS PROVIDED BY T.I.

- o AN AD-HOC SURVEY GROUP WAS SUBSEQUENTLY ADDED AT BELL TELCOS.

- o TWO QUESTIONNAIRES (ONE FOR USERS, ONE FOR MIS) WERE DEVELOPED BY INPUT WITH REVIEW AND CONTRIBUTIONS BY FLAMINGO BUSINESS AND TECHNICAL DEVELOPMENT GROUPS. BECAUSE OF THE COMPLEXITY AND RANGE OF THE PRODUCTS/ SERVICES TESTED THIS PROVED AN ARDUOUS TASK.

- o INTERVIEWS WERE CONDUCTED FIRST AMONG USER GROUPS IN APRIL AND MAY, 1986. MIS INTERVIEWS WERE CONDUCTED IN LATE MAY AND JUNE, 1986.

- o RESULTS OF INTERIM ANALYSIS ON KEY POINTS WERE COMMUNICATED TO GTEDS AS INTERVIEWS WERE GATHERED.

KEY CONCEPTS TESTED

- o THE "FLAMINGO" PRODUCT/SERVICE SET AS DEVELOPED FOR TESTING EXHIBITED SUBSTANTIAL COMPLEXITY. CONCEPTS TESTED INCLUDED:

  1. A NEW PC - ATTACHING DEVICE FOR GRAPHICS AND TEXT AND ITS APPLICATIONS.
  2. SOFTWARE FOR THE CONVERSION OF INCOMPATIBLE DATA SYSTEMS TO COMPATIBLE FORMATS (TEDS AND SOFTSWITCH - LIKE FUNCTIONS).
  3. MAINFRAME STORAGE OF CONVERTED AND UNCONVERTED DOCUMENTS, IMAGES AND MESSAGES.
  4. VARIOUS E-MAIL AND VOICE MAIL OPTIONS IN A PC CONTEXT.
  5. TEXT, IMAGE AND COMBINED TEXT/IMAGE CAPABILITIES.
  6. DELIVERY OPTIONS EMPHASIZING SERVICE AND IN-HOUSE MODES.
  7. ATTRACTIVENESS AT VARIOUS PRICE POINTS FOR FEATURE SETS AND SOFTWARE.

- o UNDER THESE MAJOR POINTS DETAILED SUB-POINTS WERE DEVELOPED AND TESTED FOR BOTH USER AND MIS-RESPONDENTS.

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- ADDITIONALLY SUBSTANTIAL DATA WAS DEVELOPED SPECIFIC TO EACH INTERVIEW TYPE. FOR EXAMPLE PC CONFIGURATION DATA WAS OBTAINED FROM RESPONDENTS AS WERE KEY APPLICATIONS. FROM MIS REPONDENTS DATA WAS GATHERED ON CURRENT SYSTEM SOFTWARE UTILIZATION AND CORPORATE GROWTH OF PC UTILIZATION IN VARIOUS CONNECTIVITY MODES. THIS DATA IS USED TO CONDITION AND BOUND THE FLAMINGO OPPORTUNITY.

MAIN USER GROUP CHARACTERISTICS

- USERS IN SAMPLE HAD 2,090 PC'S WITH DEPARTMENTAL POPULATION TOTAL OF 5,965 PERSONS EQUAL TO A 35% PENETRATION RATE.

- MACHINES CARRY SUBSTANTIAL MEMORY:

640K	=	53%
512K	=	17%
256K	=	17%
128K	=	3%
64K	=	5%
OTHER	=	5%
		100%

- 81% OF MACHINES ALSO HAVE A HARD DISK INSTALLED, OF THESE 49% REPORT 10 MEG DISKS, 35% 20 MEG, 14% 30 MEG AND 2% OTHER.

- 51% REPORT THE USE OF MONOCHROME MONITORS, 45% HAVE COLOR MONITORS WHILE 4% REPORT USING BOTH DEVICES.

- 69% REPORT THE ABILITY TO DO GRAPHICS ON THE MONITOR WHILE 29% DO NOT HAVE THE ABILITY, 2% DO NOT KNOW IF THEY HAVE GRAPHICS CAPABILITY.

- 92% OF RESPONDENTS INDICATE THAT THEIR PC'S HAVE A PRINTER DIRECTLY ATTACHED, OF THESE PRINTERS 58% ARE DOT MATRIX, 30% ARE DAISYWHEEL WHILE 12% ARE LASER PRINTERS.

- ADDITIONALLY 52% OF R'S REPORT PRINTER SHARING WHILE 48% DO NOT SHARE. SHARERS HAVE AN AVERAGE OF 1.4 ADDITIONAL PRINTERS AVAILABLE. AS WOULD BE EXPECTED, THIS GROUP HAS A HIGHER PROPORTION OF THE MORE EXPENSIVE LASERS. LASERS ACCOUNT FOR 42% OF THE SHARED PRINTERS, 25% ARE DAISY WHEELS WHILE 31% ARE DOT MATRIX, 2% ARE "OTHER."

- THIS DATA INDICATES THAT NOT LESS THAN 22% OF THE SAMPLE HAS A LASER PRINTER AVAILABLE AND THAT THE PROPORTION MAY BE AS HIGH AS 33%. SUCH A PRINTER IS IMPORTANT IN THAT IT IS BOTH EXPENSIVE AND VIRTUALLY ESSENTIAL FOR REPRODUCTION OF LOGOS, SIGNATURES AND OTHER ADVANCED FLAMINGO CAPABILITIES.

DISTRIBUTION OF PC'S BY TYPE

TYPE	PROPORTION	
IBM PC	11%	
PC XT	38%	- IBM = 75%
PC AT	26%	
CLONE PC	12%	
OTHER	13%	
	100%	

- o RESPONDENTS REPORT 87% OF INSTALLED BASE TO BE IBM PC-TYPE AND CLONES. COMPAQ AND ATT 6300 MAIN CLONES IN USE. OTHER INCLUDES McINTOSH, II & H/P.

- o AT A MINIMUM, 64% OF INSTALLED BASE (XT & AT) ARE FLAMINGO-AMENABLE. PROPORTION MAY BE HIGHER FOR SOME FLAMINGO CONFIGURATIONS WHICH COULD FIT ON A "FAT" PC WITH BIG MEMORY AND HARD DISK. ENOUGH SLOTS? POSSIBLE ALSO THAT FLAMINGO WILL FIT ON COMPAQS, RESULTING IN A FURTHER RISE IN POTENTIAL INSTALLS.

- o WE CONCLUDE THAT MACHINE TYPE IS NOT A MATERIAL IMPEDIMENT TO FLAMINGO PROLIFERATION. INSTALLATION CERTAINLY POSSIBLE ON 64% AND PERHAPS AS MUCH AS 87% OF POPULATION.

GTE & TI USER CHARACTERISTICS

- THE GTE PC PENETRATION AT 36.4% IS INSIGNIFICANTLY DIFFERENT FROM THAT OF THE GENERAL USER POPULATION. TI WITH A 69.1% PC PENETRATION IS WILDLY AT VARIANCE WITH THE NORM. THIS VARIABLE AND OTHER CHARACTERISTICS OF THE TI RESPONDENTS LEAD INPUT TO QUESTION THE LIST PROVIDED BY TI. IN NO CASE SHOULD THE TI RESPONSE BE GENERALIZED BEYOND THE COMPANY. INPUT BELIEVES THAT THE TI LIST WAS SUBJECT TO SOME UNKOWN OPERATIONS WHICH MAY HAVE RESULTED IN EXTREME RESPONDENT BIAS.

- NONETHELESS, DATA WILL BE PRESENTED FOR TI IN THE INTEREST OF COMPLETENESS.

PC DISTRIBUTION BY TYPE

TYPE	GTE %	TI %
IBM PC	8%	5%
PC XT	71%	0%
PC AT	13%	5%
CLONE PC	4%	0%
OTHER	4%	0%
TI PC	0%	90%

INPUT

- OBSERVE THAT TELOPS HAS STANDARDIZED MORE HEAVILY THAN TYPICAL ON THE XT. A MINIMUM OF 84% OF TELOPS MACHINES ARE AMENABLE TO FLAMINGO ON A TYPE CRITERION.

- TI HAS VERY SUCCESSFULLY IMPOSED IT OWN MACHINES WHICH PRESUMABLY CAN EMPLOY FLAMINGO PRODUCT. THESE MACHINES HAVE NO PENETRATION ELSEWHERE IN THE SAMPLE.

- THIS TI POLICY WOULD LEAD INPUT TO RESPECTFULLY RECOMMEND THAT GTEDS OBTAIN A GUARANTEE FROM TI THAT ANY FUTURE DEVELOPMENT FOR ANY CO-VENTURE EMPLOY IBM BRAND MACHINES TO ELIMINATE THE POSSIBILITY OF ANY INCOMPATABILITY APPEARING UNEXPECTEDLY AND THAT DEMONSTRATION SYSTEMS FOR "PUBLIC" USE BE IBM BRAND TO REMOVE ANY DOUBTS FROM THE MIND OF PROSPECTS. THIS COMMENT SHOULD NOT BE TAKEN AS AN ADVERSE REFLECTION ON TI EQUIPMENT OR ENGINEERING PRACTICES. IT SIMPLY RECONGNIZES THE IBM MARKET SHARE FOUND, I.E., 75%.

OTHER GTE & TI GROUP CHARACTERISTICS

- MACHINE MEMORY CHARACTERISTICS ARE SIMILAR TO THE MAIN SAMPLE. IT IS WORTH NOTING 40% OF GTE USERS COULD NOT SPECIFY THE MEMORY SIZE OF THEIR MACHINE.

- 80% OF GTE RESPONDENTS REPORTED HARD DISK INSTALLATION, THE SAME AS THE MAIN POPULATION. TI R'S REPORTED 90% HARD DISK INSTALLATIONS.

- GTE EXCEEDS THE POPULATION IN COLOR MONITORS (70% VS. 51%) WHILE 20% HAD MONO MONITORS AND 10% HAD BOTH. T.I. MONITORS WERE 95% COLOR AND 5% MONO, SUBSTANTIALLY DIFFERENT FROM THE POPULATION.

- 85% OF GTE USER CLAIM THE ABILITY TO DO GRAPHICS ON THE MONITOR WHILE 95% OF TI RESPONDENTS CLAIM GRAPHIC CAPABILITY COMPARED TO 69% FOR THE GENERAL POPULATION THIS IS A MODERATE POSITIVE FOR INTERNAL GTE USE.

- 90% OF GTE USERS REPORT AN ATTACHED PRINTER WHILE 95% OF TI USERS SO REPORT.

- AT GTE 83% OF PRINTERS ARE DOT MATRIX AND 17% DAISYWHEEL. NO LASER PRINTERS WERE REPORTED ATTACHED, A POTENTIALLY SERIOUS COST-INCREASER FOR FLAMINGO ADOPTION. AT TI ONE LASER WAS REPORTED (5%) WHILE 5% WERE DAISYWHEEL AND 90% DOT MATIRX. IT APPEARS THAT BOTH COMPANIES LAG THE POPULATION IN ATTACHED ADVANCED PRINTER TECHNOLOGY.

- 60% OF GTE USERS REPORT PRINTER SHARING WHILE 55% OF TI USER SO REPORT. THESE VALUES ARE NOT SIGNIFICANTLY DIFFERENT FROM THE GENERAL POPULATION AT 52%. LASERS ON A SHARED BASIS ARE PRESENT AT 30% OF GTE SITES AND 40% OF TI SITES. AS A PRACTICAL MATTER THIS SOMEWHAT ALLEVIATES THE PROBLEM OF LOW ATTACHED LASER INCIDENCE FOR FLAMINGO GRAPHICS.

PACKAGE UTILIZATION

o IN RANK ORDER OF FREQUENCY OF MENTION PACKAGES EMPLOYED BY RESPONDENTS WERE AS FOLLOWS:

	TYPE	PROPORTION USING	MEAN RANK
1.	SPREAD SHEET	82.5%	1.7
2.	WORD PROCESSING	71.3%	2.4
3.	DBMS	58.8%	2.6
4.	3270 EMULATOR	38.8%	1.6
5.	GRAPHICS	35.0%	3.4
6.	E-MAIL PACKAGE	31.3%	1.6
7.	OTHER*	25.0%	1.6
8.	CAD/CAM	8.8%	1.9

o MEAN NUMBER OF PACKAGES IN USE IS 3.5/RESPONDENT, A CONSIDERABLE NUMBER. OBSERVE THAT THE TOP 3 PACKAGES ARE IN USE BY THE MAJORITY OF USERS BUT THAT THE SPREAD SHEET IS RANKED WELL AHEAD OF THE NEXT 2 APPLICATIONS. ALSO OBSERVE THAT TO THOSE USING THEM LESS COMMON PACKAGES CAN BE VERY IMPORTANT. GRAPHICS IS NOTABLE IN TERMS OF ITS LOW RANKING BY THOSE WHO HAVE IT.

INPUT

- o PARENTHETICAL QUESTION: HOW CAN FLAMINGO HANDLE SPREAD SHEET DATA ENTRY IN AN EFFECTIVE FASHION?

* INCLUDES CALENDAR, COMPILERS, MISCELLANEOUS COMM. PACKAGES, CUSTOMIZED APPLICATIONS, 3 MENTIONS OF ATLAS MAPPING.

PC COMMUNICATIONS

- RESPONDENTS REPORT THAT 57% OF THEIR PC'S HAVE SOME FORM OF COMMUNICATIONS CAPABILITY, I.E., ARE NOT STAND ALONE MACHINES. MULTIPLE COMMUNICATIONS MODES ARE COMMON WITH COMMUNICATING MACHINES EMPLOYING AN AVERAGE OF 2.7 FUNCTIONS.

- BASED ON COMMUNICATING RESPONDENTS, FUNCTIONS ARE REPORTED AS FOLLOWS:

FUNCTION	PROPORTION
DEDICATED LINE TO MAINFRAME	57%
CONNECTS TO COMPANY E-MAIL SYSTEM	57%
LAN, COMMUNICATES OUTSIDE DEPARTMENT	32%
DIAL-UP TO MAINFRAME	32%
VAN CONNECTION	25%
PHONE TO NON-MAINFRAME COMPUTER	20%
CONNECTS TO 3RD PARTY E-MAIL	16%
INTRA-DEPARTMENTAL LAN	7%

INPUT

- NOTE THAT THE MAINFRAME IS THE PRIME CONNECTION AND THAT COMPANY E-MAIL IS EQUALLY WIDESPREAD (57% EACH OR 31% OF TOTAL SAMPLE). MATERIAL MINORITIES HAVE THE ABILITY TO THEORETICALLY COMMUNICATE "ANYWHERE" THROUGH DIAL-UP OR VAN MODES (32% DIAL, 25% VANS OR 18% & 14% OF THE SAMPLE).

FUNCTION	GTE PROPORTION	TI PROPORTION
COMPANY E-MAIL	87%	95%
DIAL-UP TO MAINFRAME	60%	32%
LAN, COMM. OUTSIDE DEPT.	53%	68%
PHONE TO NON-MAINFRAME	33%	32%
VAN CONNECTION	33%	21%
DEDICATED LINE	27%	84%
CONNECTS TO 3RD PARTY E-MAIL	13%	16%
INTRA-DEPARTMENT LAN	13%	16%

- NOTE THE RADICAL DIFFERENCES IN COMMUNICATIONS MODES BETWEEN THE TWO COMPANIES. TI IS A HEAVY USER OF DEDICATED LINES WHERE AS GTE IS QUITE LIGHT, PROBABLY A HERITAGE OF "OFFICIAL TOLL."

- BOTH COMPANIES MAKE MUCH MORE USE OF E-MAIL THAN THE GENERAL POPULATION.

- COMMUNICATING LANS ARE MATERIALLY MORE PERVASIVE IN BOTH COMPANIES THAN THE GENERAL POPULATION (32%).

PC COMMUNICATIONS

- o COMMUNICATIONS INCIDENCE IS HIGHER AT BOTH GTE (75%) AND TI (95%) THAN IN THE WORLD AT LARGE (57%). THIS IS STATISTICALLY SIGNIFICANT AT THE 90% LEVEL. OF THOSE COMMUNICATING AT GTE THE AVERAGE NUMBER OF FUNCTIONS IS 3.3 AND AT TI THE AVERAGE IS 3.7. THIS COMPARES TO 2.7 FOR THE MAIN SAMPLE.

INPUT

- CONNECTIVITY PATTERNS ARE SO DIFFERENT AT BOTH COMPANIES VERSUS "THE WORLD" THAT INPUT RECOMMENDS GREAT CAUTION IN EXTRAPOLATING FROM COMPANY EXPERIENCE BY PLANNERS AND DESIGNERS. LINKAGES AT BOTH COMPANIES ARE ATYPICAL. THESE PATTERNS MAY INFLUENCE DESIGN AND BUSINESS DECISIONS IF NOT MONITORED.

PC USAGE

- RESPONDENTS ARE HEAVY USERS OF THEIR PC'S REPORTING A MEAN DAILY USAGE OF 4.0 HOURS $\pm$ 0.4 HOURS AT THE 90% CONFIDENCE INTERVAL. THE MINIMUM REPORTED USAGE WAS 1 HOUR PER DAY, THE MAXIMUM 9 HOURS (!).

- EVEN MORE SIGNIFICANTLY TEXT/DATA ENTRY CONSTITUTED 56% OF PC TIME $\neq$ 6% AT 90% CONFIDENCE. EXPRESSED ANOTHER WAY, THE MEAN RESPONDENT REPORTS SPENDING THE MAJORITY OF HIS/HER TIME ENTERING DATA OR TEXT. THIS IS BELIEVED TO BE A POWERFUL REASON FOR THE INTEREST IN AUTOMATED TEXT/DATA ENTRY DEVICES.

- IN COMPARING COMMUNICATING AND NON-COMMUNICATING PC USERS FOR PROPORTION OF USAGE SPENT IN DATA ENTRY WE FIND THAT NON-COMMUNICATING USERS SPEND 51% OF THEIR TIME IN TEXT/DATA ENTRY WHILE "COMMUNICATORS" SPEND 61% OF THEIR TIME. WHILE NOT A STATISTICALLY SIGNIFICANT DIFFERENCE AT 90% CONFIDENCE THIS DATA SHOWS THAT:

1. SHARED FILES ON LANS OR MAINFRAME ACCESS DOES NOT REDUCE TIME SPEND IN ENTRY MODE.
2. COMMUNICATIONS FUNCTIONS <u>MIGHT</u> INCREASE TIME SPENT IN ENTRY DUE TO E-MAIL, DATA REPORTING AND SIMILAR FUNCTIONS.

- IN ANY CASE ENTRY IS AT LEAST AS LARGE A PROBLEM FOR COMMUNICATORS AS NON-COMMUNICATORS.

INPUT

TI & GTE PC USAGE

- o GTE USERS REPORT 2.3 AVERAGE HOURS OF USE PER DAY $\pm$ .7 HOURS AT THE 90% CONFIDENCE INTERVAL. THIS IS STATISTICALLY SIGNIFICANTLY LESS THAN THE 4.0 HOURS REPORTED BY THE MAIN GROUP.

- o TI USERS REPORTED AN AVERAGE OF 3.1 HOURS $\pm$ .8 HOURS AT THE 90% INTERVAL. THIS IS NOT SIGNIFICANTLY DIFFERENT FROM EITHER THE MAIN GROUP OR FROM GTE.

- o TI USAGE RANGE WAS 1-8 HOURS; GTE USAGE RANGE WAS 0.5 TO 6 HOURS.

- o GTE R'S REPORTED SPENDING 48% OF THEIR TIME IN TEXT/DATA ENTRY $\pm$ 14% AT 90% CONFIDENCE WHILE TI R'S CLAIMED 45% $\pm$ 13%. VALUES REPORTED ARE NOT SIGNIFICANTLY DIFFERENT FROM THE MAIN GROUP.

- o THERE IS NO MEANINGFUL RELATIONSHIP BETWEEN TOTAL PC TIME DAILY AND PROPORTION SPENT IN ENTRY. THIS SUGGESTS THAT DATA/TEXT ENTRY IS A PERVASIVE CHORE FOR HEAVY, MEDIUM AND LIGHT USERS.

INPUT

GTE & TI PACKAGE UTILIZATION

TYPE	GTE PROPORTION	GTE RANK	TI PROPORTION	TI RANK
WORD PROCESSING	85%	1.9	70%	2.6
SPREAD SHEET	80%	1.2	75%	2.5
E-MAIL	70%	3.2	65%	2.1
OTHER	65%	1.4	65%	1.4
GRAPHICS	50%	3.0	45%	4.6
DBMS	45%	3.4	45%	3.8
3270 EMULATOR	30%	4.3	75%	2.7
CAD/CAM	0%	xx	25%	4.8

MEAN NUMBER OF PACKAGES IN USE FOR GTE IS 4.3 PER RESPONDENT. FOR TI THE COMPARABLE NUMBER IS 4.7. THIS COMPARES TO 3.5 FOR THE MAIN GROUP.

- OBSERVE THE HIGHER INCIDENCE OF E-MAIL PACKAGES COMPARED TO THE MAIN SAMPLE IN BOTH COMPANIES AS WELL AS THE HIGH PROPORTION OF 3270 EMULATION AT TI.

DBMS USE IS LESS WIDESPREAD AT GTE AND TI THAN IN THE GENERAL GROUP AND WHEN PRESENT RECEIVES A LESS POWERFUL RANKING. GRAPHICS PACKAGES ARE OF NOTABLY LOW IMPORTANCE AT TI.

o AS IN THE GENERAL GROUP, OTHER PACKAGES ARE IMPORTANT WHERE THEY EXIST AND THEY ARE MUCH MORE PREVALENT IN THESE TWO COMPANIES THAN IN THE MAIN GROUP.

o "OTHER" PACKAGES AT TI EMPHASIZED PROGRAM DEVELOPMENT. THERE WAS NO TREND IN THE GTE "OTHER" CATEGORY WHICH ONLY EMPHASIZED "INTERNALLY" DEVELOPED PROGRAMS.

FUNCTIONAL RATINGS

- o A LARGE GROUP OF HIGHLY SPECIFIC FLAMINGO FUNCTIONS/ FEATURES WERE TESTED ON RESPONDENTS FOR PERCEIVED UTILITY. THESE ITEMS WERE ADMINSTERED EMPLOYING A 1-5 SCALE WITH "ONE" DEFINED AS "NOT USEFUL" AND "FIVE" DEFINED AS "VERY USEFUL" IN THE CONTEXT OF "THE WORK YOU DO ON YOUR JOB." SUBSTANTIAL INTER-ITEM VARIATION WAS OBSERVED.

- o IN THE MAIN GROUP SOME INDUSTRY VARIATION WAS NOTED BETWEEN MANUFACTURING, BANKING AND INSURANCE SEGMENTS. WHEN OBSERVED, THERE WAS A GENERAL TENDENCY FOR MANUFACTURING RESPONDENTS TO RATE SOMEWHAT MORE HIGHLY THAN BANKING OR INSURANCE.

- o FEATURES WILL BE PRESENTED IN RANK ORDER OF MEAN PERCEIVED UTILITY. IN GENERAL AN INTERVAL IN EXCESS OF 0.5 RATING POINTS WOULD ACHIEVE STATISTICAL SIGNIFICANCE AT THE 90% LEVEL.

- o ASTERISK (*) APPEARING ALONGSIDE PROPORTION INDICATES UNUSUAL DISTRIBUTION OF RESPONSES SHOWING STRONG BUT DIVIDED OPINION ON FUNCTION LISTED. IN GENERAL THIS TENDENCY RELATES TO "ADVANCED" DRAWING AND FAX CAPABILITIES.

INPUT

UTILITY RATINGS RANK ORDER

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
20A	ENGLISH HOST DB ACCESS	4.2	76	
26	EDIT SCANNED TEXT	4.1	78	
20	HOST DB ACCESS	4.1	76	
25	SCAN TYPEWRITTEN TEXT	4.1	74	
21A	ENGLISH HOST APP. ACCESS	4.1	69	
27	STORE SCANNED TEXT PC	4.0	70	
21	HOST APP. ACCESS	3.9	62	
48	SCAN FORMS, IMAGES, TEXT	3.7	58	x
33	M.F. REPORT TO O/A SYS.	3.7	68	
32	S/R REVISABLE O/A SYS.	3.7	63	x
29	STORE TEXT ON O/A SYS. LIB.	3.7	63	
30	S/R TEXT IN REVISABLE (DCA)	3.7	59	
34	DOCUMENT INTERVENDOR TRANSP.	3.7	65	
35	KEY WORD/PHRASE SEARCH	3.7	65	
28	STORE TEXT IN M.F. LIB.	3.6	60	
49	S/R IMAGE/TEXT W/PC'S	3.6	59	x
47	COMBINE TEXT/IMAGE PC	3.5	54	
23	PC EMAIL IN COMPANY	3.5	55	

UTILITY RATINGS RANK ORDER (continued)

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
22	CONTROL HOST JOBS	3.5	49	
17	S/R FAX W/PC	3.4	56	x
45	S/R BOOK PGS W/PC	3.3	51	x
50	STORE TEXT/IMAGE ON LAN	3.3	51	x
51	STORE TEXT/IMAGE ON MF	3.3	49	x
43	S/R DRAWINGS W/PC	3.2	48*	x
18	FAX AS W/P INPUT	3.2	48*	x
39.	STORE DRAWINGS IN PC	3.1	49*	x
40	MODIFY DRAWINGS	3.1	50*	x
41	MOVE DRAWING ON PAGE	3.1	48*	x
42	CAPTION ON DRAWING	3.1	45*	x
37	STORE LETTERHEAD	2.9	43*	
24	PC E-MAIL OUT COMPANY	2.9	33	
38	STORE SIGNATURE	2.9	31*	
44	STORE DRAWING ON M.F.	2.8	39*	x
35a	DOC TRANS. SVC.	2.8	33*	x
16	TEXT/VOICE TRANSLATE	2.8	36*	
19	FAX AS PRINTER	2.8	34*	x
18a	FAX AS GRAPHICS INPUT	2.8	36*	x
15	PC VOICE MAIL	2.8	33*	

INPUT

UTILITY RATINGS RANK ORDER (continued)

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
36	SIGNATURE STORE IN PC	2.6	33*	
51a	TEXT/IMAGE SVC.	2.5	26	x
31	S/R PC NO REVISE	2.4	21	
52	VOICE ANNOTATE	2.4	25	
46a	IMAGE SVC.	2.4	25	x
13	PC PHONE ANSWER	2.3	20	
14	PC PHONE DIALER	2.3	20	
46	NON-ENGLISH CHARACTER	2.0	18	

* INDICATES SPLIT DISTRIBUTION WHERE MIDDLE (3) IS LOW-COMPARED TO HI/LO PROPORTIONS

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FUNCTION/UTILITY COMMENTARY

- HOST RELATED FEATURES TOP THE LIST WITH STRONG SHOWING BY BOTH DB AND APPLICATIONS ACCESS. OBSERVE THAT PLAIN LANGUAGE ACCESS DOES NOT SHOW A MATERIAL ADVANTAGE OVER CONVENTIONAL METHODS. THIS MAY BE DUE TO RATING "COMPRESSION" BUT ENGLISH OR "PLAIN" LANGUAGE SHOULD NOT BE CONSIDERED A CONQUEST FUNCTION. IT IS NOT A NEGATIVE HOWEVER.

- AT THE 80% CONFIDENCE INTERVAL (BUT NOT 90%) TEXT SCANNING IS SIGNIFICANTLY MORE IMPORTANT THAN IMAGE SCANNING AT THE SPECIFIC FUNCTION/UTILITY LEVEL. THIS IS ALSO SUPPORTED BY THE RATINGS PROPORTIONS OF 74% VS 58%. SUBSEQUENTLY WE WILL SEE OVERALL CONCEPT EVALUATIONS WHICH SUPPORT THIS.

- THERE IS A TENDENCY TO PREFER PC STORAGE OF TEXT OVER O/A AND MAINFRAME STORAGE DESPITE THE VERY HIGH INTEREST IN MAINFRAME ACCESS. THIS IS SIGNIFICANT AT THE 80% INTERVAL.

- COMBINED TEXT/IMAGE PC CAPABILITY IS MATERIALLY LESS POWERFUL IN ITS UTILITY BUT STILL STRONG WITH ABOUT HALF THE REPONDENTS (AS COMPARED TO TEXT).

- KEYWORD SEARCH OF DOCUMENTS IS ATTRACTIVE TO 65% OF USER RESPONDENTS AND IS RELATIVELY POWERFUL, AS IS THE ABILITY TO COMMUNICATE WITH O/A SYSTEMS FROM PC'S AND MAINFRAMES. THIS IS ALSO CONSISTENT WITH STRONG RATING OF INTERVENDOR TRANSPARENCY (3.7).

- THE ABILITY TO MANIPULATE AND MODIFY DRAWINGS IS SIGNIFICANTLY (90% INTERVAL) LESS IMPORTANT THAN THE ABILITY TO SCAN FORMS. THESE ITEMS BRING OUT STRONG DIVERGENCE OF OPINION IN RESPONDENTS.

- THE ABILITY TO USE FAX AS WORD PROCESSING INPUT IS ALSO "CONTROVERSIAL," APPEALING STRONGLY TO HALF THE RESPONDENTS AND BEING RATED POORLY BY A LARGE PROPORTION.

- TI "DEMO" FUNCTIONS SUCH AS THE ABILITY TO CAPTURE LETTERHEAD AND SIGNATURES DO NOT PERFORM VERY WELL, ESPECIALLY AS COMPARED TO THE ABILITY TO STORE FORMS. WHILE LETTERHEAD (2.9, 43%) IS BETTER THAN SIGNATURE (2.9, 31%), BOTH ARE ECLIPSED BY FORMS (3.7, 58%). DEMONSTRATION CHANGE IS STRONGLY RECOMMENDED.

INPUT

- o THE RELATIVELY LOW RATING (2.8, 39%) FOR MAINFRAME DRAWING STORAGE SUGGESTS THAT THIS EXPENSIVE DEVELOPMENT CAN BE POSTPONED FOR THE PRESENT. TEXT M.F. STORAGE IS SIGNIFICANTLY MORE APPEALING (3.6, 60%).

- o THIRD PARTY SERVICES ARE WEAKLY RECEIVED WITH TEXT DOCUMENT TRANSLATION THE STRONGEST PERFORMER AT 2.8 and 33%. TEXT/IMAGE SERVICE RECEIVES A UTILITY RATING OF 2.5 AND 26%, ABOUT THE SAME AS IMAGE SERVICE 2.4 AND 25%. THESE DATA SUGGEST THAT A "SERVICE BUREAU" APPROACH SHOULD NOT BE THE FIRST CHOICE OF DISTRIBUTION CHANNELS.

- o DOCUMENT TRANSLATION RECEIVES A "5" FROM 20% OF RESPONDENTS, IMAGE SERVICE RATING 5 BY 14% AND TEXT/IMAGE ARE 5-RATED BY 11%. IN INPUT'S OPINION THESE LAST TWO RATINGS PRECLUDE THE POSSIBILITY OF A SUCCESSFUL SERVICE, PARTICULARLY IN LIGHT OF THE REQUISITE SOFTWARE DEVELOPMENT. THE 20% RATING "5" FOR DOCUMENT TRANSLATION IS SOMEWHAT MORE EQUIVOCAL BUT BY NO MEANS DOES THIS INDICATE STRONG DEMAND.

INPUT

- ALTERNATIVE USES OF FAX MACHINES AND PC VOICE MAIL ARE ESSENTIALLY CONTRA-INDICATED FOR IMMEDIATE DEVELOPMENT AND/OR OFFERING AND EXHIBIT CONSIDERABLE OPINION SPLIT ON THE UTILITY DIMENSION.

- DOCUMENT COMMUNICATIONS WITHOUT REVISABILITY ARE OF EXTREMELY LIMITED UTILITY WITH A RATING OF 2.4.

- AUTOMATED PHONE CAPABILITIES AND VOICE ANNOTATION OF MESSAGES ARE AMONG THE BOTTOM RATERS WITH ONLY LIMITED APPEAL IN THE GENERAL SAMPLE.

INDUSTRY DIFFERENCES

- OF THE 45 FUNCTIONS TESTED FOR UTILITY, 17 OR 38% SHOWED SIGNIFICANT VARIATION BY INDUSTRY. IN ALL CASES OF INDUSTRY VARIATION FOUND MANUFACTURING RESPONDENTS WERE SEEN TO BE MORE POSITIVE THAN BANKING OR INSURANCE. THIS COMPARISON WAS RUN FROM LOWEST MEAN UTILITY WITHIN A FUNCTION TO THE HIGHEST.

FUNCTION UTILITY DIFFERENCES

Q#	FUNCTION	MFG RATING	B OR I LOW RATING	DIFF
48	SCAN FORMS, IMAGES, TEXT	4.0	3.4 B	0.6
32	S/R REVISABLE O/A SYS	4.0	3.4 I	0.6
49	S/R IMAGE/TEXT W/PC'S	4.0	3.2 B	0.8
17	S/R FAX W/PC	3.7	3.0 I	0.7
45	S/R BOOK PAGES W/PC	3.9	2.7 I	1.2
50	STORE TEXT/IMAGE ON LAN	3.9	2.9 B	1.0
51	STORE TEXT/IMAGE ON M.F.	3.6	2.9 I	0.7
43	S/R DRAWINGS W/PC	3.8	2.8 B	1.0
18	FAX AS W.P. INPUT	3.7	2.8 I	0.9

FUNCTION UTILITY DIFFERENCES (continued)

Q#	FUNCTION	MFG RATING	B.D.R.I LOW RATING	DIFF
39	STORE DRAWINGS IN PC	3.8	2.7 I	1.1
40	MODIFY DRAWINGS	3.8	2.8 I	1.0
41	MOVE DRAWING ON PAGE	3.8	2.6 B	1.2
42	CAPTION ON DRAWING	3.7	2.7 B	1.0
19	FAX AS PRINTER	3.3	2.5 I	0.8
18a	FAX AS GRAPHICS INPUT	3.3	2.3 B	1.0
51a	TEXT/IMAGE SERVICE	2.9	2.1 I	0.8
46a	IMAGE SERVICE	2.8	2.0 B	0.8

o THIS DATA SUGGESTS STRONGLY THAT A MANUFACTURING INDUSTRY EMPHASIS IN WARRANTED. KEY FEATURES IN COMMUNICATIONS, STORAGE, DRAWING HANDLING, FAX AND SERVICE ARE ALL BETTER-RECEIVED.

INPUT

GTE UTILITY RATINGS

- WITH CERTAIN UNCOMMON EXCEPTIONS, THE UTILITY RATINGS OF GTE RESPONDENTS WERE INSIGNIFICANTLY DIFFERENT FROM THE MEAN RATINGS OF THE MAIN GROUP, THE EXCEPTIONS ARE AS FOLLOWS:

Q#	FUNCTION	MAIN RATE	% 4/5	GTE RATE	% 4/5
13	AUTO PHONE ANSWER	2.3	20	3.0	50
23	IN-CO. E- MAIL	3.5	55	4.3	75
31	S/R NO REVISE	2.4	22	3.2	45

- THESE DIFFERENCES ARE SIGNIFICANT AT THE 90% LEVEL. THEY APPEAR TO INDICATE A STRONGER UNDERLYING NEED FOR SUPPORT IN VARIOUS COMMUNICATIONS DIMENSIONS THAN THE GROUP AS A WHOLE.

- WHILE THE GTE GROUP IS HIGHLY SIMILAR TO THE WHOLE IN OTHER REGARDS, IT IS WORTH NOTING THAT GTE USERS ARE OTHERWISE MORE LIKE THE FINANCIAL (SERVICE) RESPONDENTS SINCE THEY DO NOT SHARE MANUFACTURING'S HIGH ENTHUSIASM FOR THE "DRAWING" FUNCTIONS.

- THE UNUSUAL BI-MODAL RESPONSE CHARACTERISTIC IS PRESENT ON ITEMS 13 & 31. AS MENTIONED EARLIER, CERTAIN FLAMINGO FUNCTIONS PRECIPITATE STRONG OPINION FROM RESPONDENTS.

- WITH THE EXCEPTIONS NOTED, GTE USER UTILITIES ARE NOT MATERIALLY DIFFERENT FROM THE MAIN GROUP.

INPUT

TI UTILITY RATINGS

Q #	FUNCTION	MAIN RATING	% 4/5	TI RATING	% 4/5
17	S.R FAX W/PC	3.4	56	4.1	70
18a	FAX AS GRAPHICS INPUT	2.7	36	4.2	75
19	FAX AS PRINTER	2.8	34	4.0	60
20a	ENGLISH HOST DB ACCESS	4.2	76	3.6*	60
21a	ENGLISH HOST APP. ACCESS	4.1	63	3.3*	30
23	PC E-MAIL IN COMPANY	3.5	55	4.5	90
36	SIGNATURE STORE IN PC	2.6	33	3.5	55
39	STORE DRAWINGS IN PC	3.1	49	3.9	65
40	MODIFY DRAWINGS	3.1	50	4.0	75
42	CAPTION ON DRAWING	3.1	45	4.0	80
43	S/R DRAWINGS W/PC	3.2	48	4.3	70
44	STORE DRAWING ON M.F.	2.8	39	3.9	65
46	NON-ENGLISH CHARACTER	2.0	18	2.9	30
47	COMBINE TEXT/IMAGE PC	3.5	54	4.4	80
48	SCAN FORMS, IMAGES, TEXT	3.7	58	4.5	85
49	S/R IMAGE/TEXT W/PC'S	3.6	59	4.6	90
50	STORE TEXT/IMAGE ON LAN	3.3	51	4.2	75
51	STORE TEXT/IMAGE ON MF	3.3	49	4.1	70
	MEAN % 4/5		48.5%		68.1%

* INDICATES LOWER RATING THAN MAIN GROUP

INPUT

TI UTILITY RATINGS COMMENT

- TI RESPONDENTS DIFFER SHARPLY FROM THE MAIN GROUP AND GTE IN THEIR UTILITY RATINGS. 18 (40%) RATINGS WERE DIFFERENT WITH ALL BUT TWO IN A POSITIVE DIRECTION.

- THESE DIFFERENCES (IF REAL AND NOT THE RESULT OF RESPONDENT SELECTION) ARE OF SUBSTANTIAL IMPORTANCE TO GTE PLANNERS AND PRODUCT DESIGNERS. BASICALLY, THEY RAISE A QUESTION AS TO THE REPRESENTATIVENESS OF THE TI UTILITY PROFILE. TI APPEARS TO BE A "SPECIAL" OR "UNUSUAL" COMPANY WITH RESPECT TO PC USER NEEDS. THIS IMPLIES A NEED FOR GREAT CAUTION IN ACCEPTING PRODUCT CONCEPTS OR DEVELOPMENTS WHICH GREW FROM INTERNAL NEEDS. SUCH CONCEPTS SHOULD BE TESTED THOROUGHLY OUTSIDE TI IF AT ALL POSSIBLE.

- MAJOR AREAS OF POSITIVE VARIATION ARE IN FAX CAPABILITY, E-MAIL, SIGNED DOCUMENTS, DRAWING CAPABILITY, MAIN-FRAME AND LAN STORAGE AND COMBINATION TEXT/IMAGE CAPABILITY. INTERESTINGLY, TI USERS ARE RELATIVE REJECTORS OF PLAIN LANGUAGE ACCESS.

- IN ALL ITEMS SAVE PLAIN LANGUAGE ACCESS THE TI GROUP TENDS TO GIVE MORE POSITIVE RATINGS. HAVE THESE R'S BEEN PRE-SOLD OR PRE-SELECTED IN SOME WAY?

INPUT

CONCEPT RATINGS

- IN ADDITION TO UTILITY RATINGS OF SPECIFIC FUNCTIONS, RESPONDENT'S WERE ASKED TO RATE THE CONCEPTS ON AN OVERALL BASIS WITH RESPECT TO HOW "IMPORTANT" REGULAR USE OF A CLASS OF CAPABILITIES WOULD BE IN THEIR JOB. THE CLASSES RATED WERE PHONE CAPABILITY, IMAGE CAPABILITY, TEXT SCANNING AND COMBINED IMAGE/TEXT CAPABILITY. "ONE" IS UNIMPORTANT: FIVE IS "VERY IMPORTANT."

CLASS	MAIN NOW	MAIN 3 YRS	% 4/5 NOW	% 4/5 3 YRS	DIFF
PHONE	2.9	3.5*	33	55	+22
IMAGE	3.0	3.5*	34	51	+17
TEXT	3.7	4.1	57	72	+15
IMAGE/TEXT	3.3	3.9*	39	66	+27

- NOTE THE MOST RAPID INCREASES OCCUR IN THE IMAGE/TEXT GROUPING WHERE 66% RATE THE CONCEPT AS 4/5. IN THE "VERY IMPORTANT" (5) RATING THE PROPORTION ALMOST DOUBLES FROM 16% TO 30%.

- FOR TEXT, SUBSTANTIAL IMPORTANCE IS ALREADY PLACED ON THIS FUNCTION AND IT CONTINUES TO GROW TO 72%. FOR 5 RATERS THE PROPORTION INCREASES FROM 36% TO 45%. THIS SUGGESTS THAT TEXT SCANNING WILL BE SOMEWHAT MORE IMPORTANT THAN IMAGE/TEXT TO SOME USERS IN THE FUTURE.

- IMAGE ALONE DOES NOT FARE AS WELL, SUGGESTING ANY DEVICES OFFERED SHOULD COMBINE FUNCTIONS OR OFFER TEXT ALONE. IMAGE ONLY 5 RATINGS ARE SLACK, INCREASING FROM 22% TO 30%, A RELATIVELY SLOW GROWTH RATE.

- PHONE AS A CONCEPT FARES BETTER THAN THE PHONE SPECIFICS TESTED. THIS MAY SUGGEST UNADDRESSED NEEDS IN THIS AREA. 5 RATERS MOVE FROM 18% TO 29% OVER THREE YEARS, A RELATIVELY STRONG PERFORMANCE.

INDUSTRY CONCEPT RATINGS

- AS IN SPECIFIC FUNCTIONS, MANUFACTURING RESPONDENTS TEND TO RESPOND MORE FAVORABLY. THIS WOULD BE EXPECTED.

	MFG		OTHER	
CLASS	NOW	3 YEARS	NOW	3 YRS
PHONE	3.1	3.7	2.6	3.2 (I)
IMAGE	3.5	3.9	2.7	3.3 (I)
TEXT	3.7	4.1	NSD	NSD
IMAGE/TEXT	3.6	4.0	2.9 (B)	NSD

- NOTE THAT THE RATINGS OF TEXT ARE NOT SIGNIFICANTLY DIFFERENT FOR TEXT. WHILE A CURRENT DIFFERENCE EXISTS FOR IMAGE/TEXT IT DISAPPEARS IN THE FUTURE.

- WHEN DIFFERENCES EXIST, IT IS USUALLY WITH RESPECT TO THE INSURANCE SEGMENT. BANKING IS TYPICALLY "MID-POINT" ON CONCEPT RATINGS.

- CONCEPT DATA SUGGESTS THAT THE TEXT DEMAND IS MORE OF A PRESENT NEED WHILE TEXT/IMAGE WILL GROW TO EQUIVALENT STRENGTH IN THE FUTURE.

INPUT

GTE CONCEPT RATINGS

CLASS	GTE NOW	GTE 3 YRS	MAIN NOW	MAIN 3 YRS
PHONE	3.8*	4.2	2.9	3.5
IMAGE	3.2	4.0	3.0	3.5
TEXT	3.7	4.0	3.7	4.1
IMAGE/TEXT	3.9*	4.1	3.3	3.9

- o CURRENT CONCEPT IMPORTANCE AT PRESENT IS SIGNIFICANTLY GREATER AT GTE THAN IN THE MAIN SAMPLE. THESE DIFFERENCES MODERATE WITH TIME SINCE GTE R'S DO NOT POSIT INCREASING IMPORTANCE FOR THE TWO CONCEPTS WHERE THIS OCCURS: PHONE AND IMAGE/TEXT.

- o A CAUTIONARY NOTE TO PLANNERS AND DESIGNERS IS IN ORDER: GTE R'S SHOW GREATER GENERAL (CONCEPT) ENTHUSIASM THAN SPECIFIC (FUNCTION) ENTHUSIASM. THIS SUGGESTS THAT WHILE INITIAL CONTACTS WITH POTENTIAL USERS MAY BE EXTREMELY POSITIVE, THE INITIAL POSITIVE REACTION MAY BE MODULATED WHEN CONFRONTED WITH OPERATIONAL SPECIFICS.

* SIGNIFICANT AT 90%.

INPUT

TI CONCEPT RATINGS

- ON CONCEPT RATINGS THERE WERE NO STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN TI AND THE MAIN GROUP. COMBINATION IMAGE/TEXT SHOWED THE GREATEST VARIATION (ABOUT 0.5% PTS.) BUT DID NOT ACHIEVE STATISTICAL SIGNIFICANCE. A MODERATE TENDENCY TO RATE HIGHER WAS ALSO PRESENT IN THE CONCEPT TESTING AS IN FUNCTION TESTING. SINCE DIFFERENCES ARE NOT MATERIAL, DATA IS NOT PRESENTED.

PRICE EVALUATIONS, MAIN GROUP

- THREE PRICE POINTS WERE TESTED FOR "THE COMPLETE RANGE OF VOICE, IMAGE AND TEXT" CAPABILITIES. ON THIS SCALE ONE WAS "NOT VERY INTERESTED AND FIVE WAS "VERY INTERESTED." FOR THE MAIN GROUP RESULTS WERE AS FOLLOWS:

	RATING %					
PRICE	1	2	3	4	5	4/5
$6000	22	24	22	13	19	32%
$4000	16	13	26	19	26	45%
$2000	10	9	14	23	44	67%

- OBSERVE THAT SHIFTS ARE IN THE APPROPRIATE DIRECTION. AT $2000 2 OUT OF 3 R'S RATE FLAMINGO AT 4 OR 5.

- AT $6000 ONE IN FIVE R'S REPORTS THAT HE/SHE IS VERY INTERESTED. AT $2000 THIS RISES TO ONE IN 2¼.

- BY MULTIPLYING THE PROPORTIONS BY THE PRICE POINT WE MAY EVALUATE THE PRICE/ELASTICITY OF FLAMINGO:

PRICE	4/5	PRODUCT
\$ 6000	32	1920
\$ 4000	45	1800
\$ 2000	67	1340

- AS THE COLUMN LABELLED PRODUCT SHOWS, PRICE FALLS FASTER THAN INTEREST AT THE 4/5 LEVEL RISES. THIS INDICATES THAT TOTAL DOLLAR VOLUME WILL FALL AT THE LOWER PRICE POINTS DESPITE INCREASED UNIT SALES. THE SAME IS TRUE FOR 5 RATERS ALONE, 4/5 RATERS AND 3/4/5 RATERS AS GROUPS.

- ACCORDINGLY, THE EVIDENCE SUGGESTS THAT THERE IS NO ADVANTAGE IN PRICING FLAMINGO BELOW \$6000 FROM A TOTAL REVENUE PERSPECTIVE. IF, HOWEVER, PRODUCTION AND SALES COSTS FALL VERY RAPIDLY NET PROFIT PER UNIT SOLD MIGHT BE GREATER AT HIGHER VOLUMES. THIS SCENARIO IS CONSIDERED UNLIKELY BUT IS POSSIBLE.

PRICE EVALUATIONS, GTE & TI

GTE PRICE RATINGS %

PRICE	1	2	3	4	5	4/5	PRODUCT
$6000	36	6	29	12	17	29%	1740
$4000	17	13	13	19	38	57%	2280
$2000	0	12	13	25	50	75%	1500

TI PRICE RATINGS %

PRICE	1	2	3	4	5	4/5	PRODUCT
$6000	17	11	22	17	33	50	3000
$4000	10	11	11	26	42	68	2720
$2000	5	0	11	5	79	84	1680

- ONCE AGAIN TI RESPONDENTS DISPLAY THEIR MASSIVE ENTHUSIASM BUT RESULTS CONTRAINDICATE A LOW PRICE BASED ON TOTAL REVENUE.

- GTE INTERVIEWEES DO DISPLAY LIMITED CLASSICAL PRICE ELASTICITY. AS THE FLAMINGO PRICES DROP TO $4000 VOLUME PICKS UP MORE RAPIDLY AND A LARGER TOTAL MARKET WOULD EXIST. BY $2K THE TOTAL MARKET IS LESS THAN AT $6K ALTHOUGH VOLUME WOULD BE 2.6 TIMES GREATER.

MIS SOFTWARE & COMMUNICATIONS

TYPE	% NOW	% 3 YEARS
MVS	98	95
VM	60	60
DOS/VSE	30	20
TSO	88	75
IMS	68	65
CICS	95	90
DB2/SQL	30	40
PROFS	40	35
DISSOSS	35	45
APPC (LU 6.2)	20	40
3RD PTY. DBMS	63	58
3RD PTY LINK SOFTWARE	45	53
SNA	90	90
BISYNC	90	78
ASYNC	85	80
PUBLIC X.25	53	58
PVT X.25	38	40
PVT EARTH STATIONS	18	25

INPUT

- BY AND LARGE, SYSTEMS SOFTWARE WILL BE STABLE DURING THE NEXT THREE YEARS. MODERATE MIGRATION OUT OF TSO AND DOS/VSE SHOULD NOT INFLUENCE FLAMINGO.

- APPC WILL GROW RAPIDLY BUT WILL STILL BE AT A MINORITY OF SHOPS.

- IN COMMUNICATIONS SOME BISYNC ATTRITION WILL BE SEEN BUT THIS SHOULD HAVE NO EFFECT. NOTE THAT PACKET IS NOT EXPECTED TO GROW STRONGLY. SOME EARTH STATION INCREASE SEEN BUT THIS IS MODERATE.

- A REMARKABLY LARGE (45%) OF R'S INDICATED THE EXISTENCE OF SOME TYPE SOFTWARE FOR LINKING IBM AND NON-IBM SYSTEMS. PRESUMABLY, THESE ARE PACKAGES FROM DEC, WANG, PRIME, ETC. NOT MUCH GROWTH IS EXPECTED IN THIS ARENA BUT THIS DOES NOT SEEM TO DO GREAT DAMAGE TO FLAMINGO SOFTWARE <u>IF</u> THE PRICE IS RIGHT. THIS AREA NEEDS FURTHER INVESTIGATION.

- OVERALL, THE STABLE SYSTEMS AND COMMUNICATIONS ENVIRONMENT SHOULD EASE FLAMINGO DEVELOPMENT.

PC MODES NOW AND FUTURE (MIS)

	% NOW	# PC'S	% 3 YRS	# PC'S	AAGR %
LAN, NO HOST	13	28.0	5	21.3	(8.7)
LAN TO HOST	5	10.7	21	89.2	102.8
PC VIA CONTROLLER (HOST)	22	47.3	39	165.7	51.9
PC TO MINI	10	21.5	13	55.3	37.0
STANDALONE	50	107.5	22	93.5	(4.5)
	100	215.0K	100	425.0K	25.5

- OBSERVE THE STRONG OVERALL GROWTH OF PC'S IN THESE FIRMS. IT IS AT LEAST TWICE THE OVERALL PC MARKET GROWTH.

- SECOND, NOTE THE STRONG TREND TOWARD CONNECTIVITY. THE ACTUAL NUMBER OF UNCONNECTED PC'S WILL SHRINK SLIGHTLY AND THE PROPROTION WILL FALL FROM ONE HALF TO ONE FOURTH UNCONNECTED.

INPUT

- THE GROWTH "HOT SPOT" IS LAN CONNECTED TO HOST. FLAMINGO STRATEGY SHOULD TAKE THIS INTO ACCOUNT AS THE INCREASED LOCAL CONNECTION IMPLIES A BETTER OPPORTUNITY TO SHARE FLAMINGO STATIONS. THIS <u>MIGHT</u> REDUCE STATION UNIT SALES OR IT MIGHT PROVIDE AN EXCELLENT ENTRY POINT. MOST LIKELY EFFECT IS UNCLEAR <u>BUT</u> HOST INTERCONNECTION IMPLIES MIS INVOLVEMENT IN CONFIGURATION SELECTION.

- ALL THIS DATA SUGGEST INCREASING INTEGRATION OF PC'S WHICH IMPLIES A GREATER ROLE FOR MIS AND LESS USER INDEPENDENCE IN GENERAL. SALES AND CHANNEL STRATEGIES SHOULD TAKE THIS INTO ACCOUNT. IN THE FUTURE MIS WILL BECOME INCREASINGLY DIFFICULT TO END-RUN ON PC ITEMS.

MIS UTILITY RATINGS RANK ORDER

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
36	HOST DB ACCESS	4.4	85
36a	ENGLISH HOST DB ACCESS	4.4	80
42	EDIT SCANNED TEXT	4.3	85
41	SCAN TYPEWRITTEN TEXT	4.2	83
43	STORE SCANNED TEXT PC	4.2	83
37	HOST APP. ACCESS	4.2	80
37a	ENGLISH HOST APP. ACCESS	4.2	78
66	SCAN FORMS, IMAGES, TEXT	4.0	75
50	M.F. REPORT TO O/A SYS.	3.9	70
39	PC E-MAIL IN COMPANY	3.9	70
49	S/R REVISABLE O/A SYS	3.9	70
46	STORE TEXT ON O/A SYS. LIB.	3.9	65
57	MODIFY DRAWINGS	3.8	73
59	CAPTION ON DRAWING	3.8	70
58	MOVE DRAWING ON PAGE	3.8	70
47	S/R TEXT IN REVISABLE (DCA)	3.8	70
65	COMBINE TEXT/IMAGE PC	3.8	68
67	S/R IMAGE/TEXT W/PC'S	3.8	68
69	STORE TEXT/IMAGE ON M.F.	3.8	63

INPUT

MIS UTILITY RATINGS RANK ORDER (continued)

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
45	STORE TEXT IN M.F. LIB.	3.8	63
52	KEY WORD/PHRASE SEARCH	3.7	68
68	STORE TEXT/IMAGE ON LAN	3.6	68
51	DOCUMENT INTERVENDOR TRANSP.	3.6	65
60	S/R DRAWINGS W/PC	3.6	65
56	STORE DRAWING IN PC	3.6	
61	STORE DRAWING ON M.F.	3.6	63
34	FAX AS W/P INPUT	3.6	60
40	PC E-MAIL OUT COMPANY	3.4	60
38	CONTROL HOST JOBS	3.3	53
33	S/R FAX W/PC	3.2	45
34a	FAX AS GRAPHICS INPUT	3.1	43
32	TEXT/VOICE TRANSLATE	3.1	43
31	PC VOICE MAIL	3.1	38
62	S/R BOOK PGS W/PC	3.1	35
54	STORE LETTERHEAD	3.0	43
55	SIGNATURE & LETTERHEAD	3.0	43
53	SIGNATURE STORE IN PC	2.8	35
30	PC PHONE DIALER	2.7	25
35	FAX AS PRINTER	2.6	30

MIS UTILITY RATINGS RANK ORDER (continued)

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
48	S/R PC NO REVISE	2.6	28
52a	DOC TRANS. SVC.	2.4	23
71	VOICE ANNOTATE	2.4	23
29	PC PHONE ANSWER	2.4	15
63a	IMAGE SVC.	2.3	20
63	NON-ENGLISH CHARACTER	2.3	20
69a	TEXT/IMAGE SVC.	2.3	10

MIS UTILITY RATING COMMENT

- o RATINGS OF MIS ARE REMARKABLY CONSONANT WITH THOSE OF USERS FOR THE VAST MAJORITY OF FUNCTIONS RATED. WHILE PERHAPS SOMEWHAT SURPRISING TO THE MORE CYNICAL OBSERVER, THIS IS A POSITIVE FOR FLAMINGO. USERS AND MIS PERSONNEL ARE IN FUNCTIONAL AGREEMENT ON WHAT IS NEEDED AT THE STATION, THE LAN AND CENTRAL SITE WITH FEW EXCEPTIONS.

- o MATERIAL DEVIATIONS ARE AS FOLLOWS:

FUNCTION	USER	% 4/5	MIS	% 4/5
MODIFY DRAWINGS	3.1	50	3.8	73
CAPTION ON DRAWINGS	3.1	45	3.8	70
MOVE DRAWING ON PAGE	3.1	48	3.8	70
STORE TEXT/IMAGE ON M.F.	3.3	49	3.8	63
PC E-MAIL OUTSIDE	2.9	33	3.4	60

- o CONSIDERING THAT 45 FUNCTIONS WERE RATED THE APPERANCE OF SIGNIFICANT VARIATION ON 11% REPRESENTS REMARKABLE AGREEMENT.

- OBSERVE THAT THREE FUNCTIONS ARE ALL RELATED TO DRAWING CAPABILITIES. INCREASED EMPHASIS ON TEXT/IMAGE STORAGE ON THE MAINFRAME IS A MATTER OF NATURAL EMPHASIS. TO SOME EXTENT, THE STRONG MIS RATINGS FOR THE FIRST FOUR CAPABILITIES IS UNFORTUNATE SINCE THEY EMPHASIZE FLAMINGO AREAS IN NEED OF DEVELOPMENT.

MIS CONCEPT RATINGS

- o FOR CONCEPTS, MIS RESPONDENTS WERE QUERIED ON A SERIES PARALLEL TO THE USERS.

	NOW	3 YRS	% 4/5 NOW	% 4/5 3 YRS	DIFF.
PHONE	3.0	3.5	43	60	+17
IMAGE	3.3	3.8	40	63	+23
TEXT	3.7	4.0	50	70	+20
IMAGE/TEXT	3.4	3.8	45	63	+18

- o THIS DATA DOES NOT SHOW SIGNIFICANT INDUSTRY VARIATION ON IMPORTANCE AS DOES THE USER DATA. IN ADDITION THE RATINGS CHANGES DO NOT ACHIEVE STATISTICAL SIGNIFICANCE AT THE 90% INTERVAL.

- o DIRECTIONAL CHANGES ARE, HOWEVER, IN THE OPTIMUM DIRECTION BUT AT MODERATELY LOWER VELOCITY THAN THE USER SAMPLE FROM A RATINGS STANDPOINT.

- o ENCOURAGING IS THE FACT THAT MIS IS NOT LESS AMENABLE TO THE CONCEPTS THAN THE USERS.

- o THE CONCEPT DATA FOR MIS INDICATES APPROXIMATELY THE SAME "STATE OF READINESS" AND RECOGNITION OF IMPORTANCE AS DOES THE USER DATA. THERE IS NO MAJOR DIFFERENCE AT THE CONCEPTUAL LEVEL.

PRICE EVALUATION (STATION)

o PRICE POINTS WERE TESTED IN A FASHION PARALLEL TO USERS. GROUP RESULTS ARE AS FOLLOWS:

	RATING %						USER
PRICE	1	2	3	4	5	4/5	4/5
$6000	42	26	16	8	8	16	32
$4000	26	37	13	16	8	24	45
$2000	10	21	23	26	20	46	67

o ONCE AGAIN OBSERVE THAT SHIFTS ARE IN THE APPROPRIATE DIRECTION BUT THAT HIGH INTEREST (% 4/5) IS LOWER BY SUBSTANTIAL AMOUNTS AMONG MIS R'S.

o AT $6000 ONLY 1 IN 13 R'S REPORTS HIGH (5) INTEREST. AT $4K THIS REMAINS THE SAME. AT $2K THIS RISES SHARPLY TO 1 IN 5.

o PRICE ELASTICITY HAS A DIFFERENT SHAPE FOR MIS THAN FOR USERS:

PRICE	4/5	PRODUCT
$6000	16	960
$4000	24	960
$2000	46	920

o PRODUCT IS ESSENTIALLY FLAT INDICATING THAT THE TOTAL MARKET DOLLARS WOULD NOT INCREASE WITH REDUCED PRICES.

INPUT

PRICE EVALUATION (STATION)

- o ADDITIONALLY, MIS R'S WERE ASKED WHAT PROPORTION OF THEIR PC POPULATIONS COULD BE JUSTIFIED FOR INSTALLATION AT THE PRICE POINTS:

PRICE	MEAN PROPROTION JUSTIFIED		90% INTERVAL
$6000	1260	21%	12-31
$4000	1080	27%	18-36
$2000	820	41%	31-50

- o THE CLOSENESS OF THESE MEAN PROPORTIONS TO THE % 4/5 DATA IS ENCOURAGING.

- o BASICALLY, I IN 5 PC'S AT THESE SITES COULD BE JUSTIFIED FOR INSTALLATION. THIS MAY BE AS HIGH AS ALMOST I IN 3 OR AS LOW AS I IN 8. AS A TYPICAL CASE, THIS WOULD SUGGEST STATIONS WITH ABOUT THE SAME PENETRATION AS CURRENTLY EXPERIENCED BY LASER PRINTERS AMONG USERS WITH FLAMINGO AT $6K.

- o OVERALL, THIS DATA INDICATES THAT SUBSTANTIAL VOLUMES MAY BE ACHIEVED IN FLAMINGO STATIONS BUT THAT MIS R'S ARE LESS ACCEPTING OF FLAMINGO STATIONS THAN ARE USERS BY A CONSIDERABLE MARGIN.

MIS PRICE EVALUATION (MAINFRAME COMPONENT)

o MISR'S WERE QUERIED ON THEIR INTEREST IN ACQUIRING SOFTWARE TO ACCOMPLISH THE TRANSLATION, SWITCHING AND STORAGE FUNCTIONS FOR TEXT AND IMAGE AT VARIOUS PRICE POINTS. INSTALLATION AND ONE YEAR OF MAINTENANCE WAS STATED TO BE A PART OF THE PRICE. MIS RESPONDENT RESULTS WERE:

	RATING %						
	1	2	3	4	5	4/5	STA. 4/5
$125K	53	15	24	3	5	8	6K = 16
100K	44	21	21	6	8	14	4K = 24
75K	32	21	21	15	11	26	2K = 46
50K	17	20	17	28	18	46	

o OBSERVE THE VERY LOW INTEREST AT THE HIGHER PRICE POINTS. BELOW $100K THE SITUATION IMPROVES MARKEDLY.

INPUT

- INTERESTINGLY, THE OUTLOOK FOR SELLING MORE COPIES NOT ONLY IMPROVES AS THE PRICE DROPS BUT THE TOTAL REVENUE ALSO INCREASES ON A "PRODUCT" BASIS:

PRICE	% 4/5	PRODUCT	% CHANGE	PROJECTED COMPANIES	REV.
125K	8	10.0		20	$ 2.5M
100K	14	14.0	40	35	3.5M
75K	26	19.5	39	65	4.9M
50K	46	23.0	18	115	5.8M

- THIS DATA INDICATES REVENUE "SLOPES OFF" BELOW 75K. IF REVENUE MAXIMIZATION WERE THE STRATEGY A PRICE BETWEEN $75 AND 100K WOULD BE BEST.

- "PROJECTED COMPANIES" INDICATES THE EXPECTED NUMBER OF FIRMS IN THE UNIVERSE OF "250 LARGEST MFGS, BANKS AND INSURERS" THAT WOULD EXPRESS HIGH INTEREST AT A SPECIFIC PRICE POINT ON THE SOFTWARE. AS CAN BE SEEN, A LARGE MARKET OPENS AT THE LOWER PRICE POINTS IN COMPANIES AND REVENUE POTENTIAL.

- IT IS POSSIBLE THAT MARKET WOULD BE LARGER DUE TO THE NEED FOR MULTIPLE INSTALLATIONS. REVENUE IN THIS CASE WOULD DEPEND ON LICENSE TYPE GRANTED FOR SOFTWARE.

A DIVERGENCE TO MARKET STRATEGY

- AS CAN BEEN SEEN THE MARKET FOR MAINFRAME SOFTWARE IS RELATIVELY SMALL IN DOLLAR VOLUME. THE MAIN "ACTION" APPEARS TO BE IN THE PROVISION OF WORK STATIONS.

- CONSIDER THAT THE MEAN INSTALLED NUMBER OF PC'S WAS 859 UNITS PER COMPANY AT PRESENT. RESPONDENTS STATED THAT AT \$6K PER STATION 21% OF PC'S WOULD BE JUSTIFIED FOR INSTALLATION ON AVERAGE. THIS EQUATES TO 180 PC'S/ COMPANY OR AN EXPENDITURE PER COMPANY OF \$1.08 M.

- IF WE ASSUME "COUPLING" OF STATION AND SOFTWARE FUNCTIONS AT THE MIS FUNCTION (I.E. NO STATION SALES WITHOUT SOFTWARE) THEN THE TOTAL SALES POTENTIAL OF THE "SYSTEM" AT VARIOUS SOFTWARE PRICE POINTS WOULD BE:

SOFTWARE PRICE	STATION PRICE	STATIONS	POTENTIAL COMPANIES	TOTAL VALUE	% SW
\$ 125K	6K	180	20	\$ 24.1M	10.4
100	6K	180	35	41.3M	8.5
75	6K	180	65	75.1M	6.5
50	6K	180	115	130.0M	4.5

INPUT

- AS THIS EXHIBIT DEMONSTRATES, SOFTWARE IS NOT A MATERIAL PORTION OF THE TOTAL REVENUE POTENTIAL BUT MAY BE AN INHIBITOR TO "SYSTEM" SALES. UNDER THE ASSUMPTIONS OF THIS ANALYSIS IT MAY BE APPROPRIATE TO PROVIDE SOFTWARE INEXPENSIVELY TO WIDEN THE MIS PROSPECT BASE FOR STATION SALES. THIS, HOWEVER, IMPLIES A VERY HEAVY RELIANCE ON TI AS A SUPPLIER.

- NOTE: CONCEPTUALLY, "COUPLING" APPEARS ONE WAY (STATION PLUS SOFTWARE OR STATION ALONE BUT NOT SOFTWARE ALONE) DUE TO REVENUE EFFECTS.

INFLUENCE OF IBM SOFTWARE

- RESPONDENTS WERE QUERIED ON THE NECESSITY OF HAVING CERTAIN IBM SOFTWARE REQUIRED TO MAKE USE OF THE CAPABILITIES. DATA IS AS FOLLOWS:

INTEREST	RATING	% 4/5
50K	3.1	46
CICS	3.3	47
DISSOSS	2.1	15
CICS & DISSOS	1.9	15

- AS THE % COLUMN IN PARTICULAR SHOWS, DISSOSS IS AN INTEREST-KILLER FOR THESE RESPONDENTS. THIS MAY BE ACCOUNTED FOR BY THE FACT THAT 95% OF THESE MIS R'S CURRENTLY HAVE CICS INSTALLED. FOR DISSOSS THE CORRESPONDING RATE IS 35% TO GROW TO 45%. APPARENTLY DISSOSS IS PROBLEMATIC FOR THESE RESPONDENTS, AND THEY WOULD PREFER TO AVOID IT. THIS MAY BE A POSITIVE FOR THE SOFTSWITCH APPROACH BUT THIS IS NOT COMPLETELY CLEAR.

- A PROPOSED TURNKEY WAS ALSO TESTED "COMPLETE WITH ALL NECESSARY SOFTWARE. THE MEAN RATING WAS 2.3 WITH 15% RATING 4/5. FUNCTIONALLY THIS MAY BE CONSIDERED A REJECTION.

PC CHARACTERISTICS & THE MARKET FOR STATIONS

- AVERAGE INSTALLED PER COMPANY, NOW = 859
- AVERAGE INSTALLED PER COMPANY, 3 YEARS = 1,700
- PC AAGR = 25.6%/YR.
- TOTAL PC POPULATION IN 250 FIRM UNIVERSE IS 215,000 NOW.
- THIS WILL GROW TO 425,000 IN 3 YEARS.
- NOTING THE 21% INSTALLED/JUSTIFIED AT 6K BY MIS RESPONDENTS, THIS WOULD EQUATE TO 45,000 UNITS IN 1986 GROWING TO A POTENTIAL 89,000 UNITS IN 1989. THIS EQUATES TO A POTENTIAL MARKET OF $534 MILLION.
- AT $4K/STATION 27% WOULD BE JUSTIFIED. THIS EQUATES TO 58,000 UNITS IN 1986 AND 115,000 IN 1989. THIS EQUATES TO A POTENTIAL MARKET OF $460 MILLION.
- AT $2K/STATION 41% WOULD BE JUSTIFIED WHICH EQUATES TO 88,000 UNITS NOW AND 174,000 UNITS IN 1989 AS POTENTIAL. THIS IS A MARKET POTENTIAL OF $349 MILLION.

INPUT

- THE MINIMUM PROBABLE MARKET MAY BE ASCERTAINED BY TAKING THE LOWER 90% INTERVAL OF THE 1989 INSTALLS (150,000) AND CONVERTING IT BY THE 21% JUSTIFICATION RATE. THIS RESULTS IN A POTENTIAL OF 31,500 UNITS OR SALES POTENTIAL OF $189 MILLION AT $6K PER STATION.

- THE 90% INTERVAL MAXIMUM IS 130,000 UNITS WITH A POTENTIAL OF $780 MILLION A 6K PER STATION.

- IT SHOULD BE RECOLLECTED THAT USERS WERE MORE POSITIVE TOWARD THE FLAMINGO STATION AT SPECIFIC PRICE POINTS THAN WERE MIS R'S. AT THE 6K AND 4K POINTS 4/5 RATINGS BY USERS WERE ALMOST TWICE AS HIGH AS MIS. IF STATIONS CAN BE SOLD TO USERS WITHOUT MIS INVOLVEMENT UNIT VOLUMES COULD BE MATERIALLY HIGHER THAN IN THESE MIS-BASED FIGURES.

CONCLUSION

- o SUMMARY IS VERY DIFFICULT IN A STUDY AS COMPLEX AS THIS ONE. OVERALL THE OUTLOOK FOR FLAMINGO APPEARS QUITE POSITIVE.

- o THERE IS A LARGE AND GROWING INSTALLED BASE SUFFICIENT TO SUPPORT LARGE NUMBERS OF FLAMINGO WORKSTATIONS.

- o A POTENTIAL "BOTTLENECK" IS THE INCREMENTAL COST OF A "MANDATORY" LASER PRINTER.

- o HEAVY PC USAGE AND THE HIGH PROPORTION OF TIME SPENT IN DATA/TEXT ENTRY WOULD APPEAR TO BE A FUNDAMENTALLY POWERFUL ACQUISITION MOTIVATOR.

- o FLAMINGO'S EMPHASIS ON CONNECTIVITY IS VERY MUCH "IN TUNE" WITH BOTH USER AND MIS INTENTIONS.

- o THE AGREEMENT ON FUNCTION BETWEEN USER AND MIS IS UNUSUAL AND A STRONG POSITIVE.

- o THE APPARENT LACK OF CLASSIC PRICE ELASTICITY-WHILE INITIALLY DISAPPOINTING-IS MOST LIKELY A TRUE POSITIVE WITH RESPECT TO WORKSTATION PRICES WHICH APPEAR (AT PRESENT) TO BE IMMUNE FROM THE COMMODITY DOG-FIGHTS WHICH HAVE BESET THE PC BUSINESS.

INPUT

CONCLUSION (continued)

- THE RELATIVELY LOW MARKET POTENTIAL FOR MAINFRAME SOFTWARE SALES HAS THE ENCOURAGING CHARACTERISTIC OF BEING CLASSICALLY PRICE-ELASTIC. SOFTWARE SALES ARE LIKELY TO REMAIN PROPORTIONATELY SMALL, CREATING SOMETHING OF A DEVELOPMENT DILEMMA IN THAT SOFTWARE COST FOR THE MAINFRAME PORTION MAY HAVE TO BE RECOVERED THROUGH STATION SALES. THERE IS GREAT SUBTLTY HERE THAT NEEDS FURTHER WORK.

- THE MIS EVALUATION WHILE LESS "ENTHUSIASTIC" THAN THE USER IS STILL MORE THAN ADEQUATE. BECAUSE OF CONNECTIVITY TRENDS MIS WILL BE A VERY STRONG INFLUENCE ON OVERALL FLAMINGO SALES.

- WITHIN THE CONTEXT OF STUDY OBJECTIVES AND LIMITATIONS, IT APPEARS THAT A VIABLE PRODUCT CAN BE DEVELOPED AND THAT THE NEED FOR DEVELOPMENT RELATIONSHIPS OUTSIDE GTEDS IS CONFIRMED.

INPUT

CONCLUSION (continued)

- THE SALE, WHILE OF A SYSTEM NATURE, HAS A HEAVY HARDWARE COMPONENT AND A SMALLER BUT CRITICAL SOFTWARE COMPONENT. GTEDS WILL BE HEAVILY DEPENDENT ON ITS VENTURE PARTNERS FOR ITS OWN SUCCESS IN THE EARLY STAGES.

- CONSERVATIVELY ESTIMATED, THE MARKET POTENTIAL IN 1989 CAN EXCEED $500 MILLION.

- ON BALANCE, WE CONCLUDE THAT THE FLAMINGO OUTLOOK IS STRONGLY POSITIVE.

PROCEDURAL NOTES

- AS AN ADHOC TASK, INPUT INTERVIEWED USERS IN BELL COMPANIES AND 4 BELL MIS DEPARTMENTS FOR A TOTAL OF 11 ADDITIONAL INTERVIEWS. NO MATERIAL DIFFERENCES EMERGED TO DISTINGUISH THE BELLS FROM THE MAIN GROUPS. THESE INTERVIEWS WERE DONE AT NO EXTRA CHARGE.

- USER DEPARTMENTS WERE WIDELY VARIEGATED IN THE MAIN GROUP. OF SAMPLE (N=80) 16% WERE FROM THE MARKETING DEPARTMENT, 15% ACCOUNTING, 13% PERSONNEL, 12% MIS USERS, 9% SALES, 5% ENGINEERING AND THE BALANCE OTHER DEPARTMENTS. DEPARTMENTAL SELECTION WAS RANDOMIZED.

- USER INDUSTRIES WERE 37.5% MANUFACTURING, 31.3% EACH BANKING AND INSURANCE FOR N=80.

- MIS INDUSTRIES WERE 32.5% MANUFACTURING, 35.0% BANKING, 22.5% INSURANCE AND 10% BELL TELCO FOR N = 40.

PROCEDURAL NOTES (continued)

- THE MAIN STUDY UNIVERSE IS SPECIFIED AS THE 100 LARGEST MANUFACTURING COMPANIES, THE 100 LARGEST BANKS AND THE 50 LARGEST INSURERS. SAMPLE FROM CURRENT PUBLIC AND ACCEPTED LISTS.

- INPUT WELCOMES QUERIES ON ALL MATTERS RELATING TO THIS STUDY. INQURIES SHOULD BE DIRECTED TO D.W. FOSTLE, VICE PRESIDENT AT (201) 299-6999.